

# \* Code Design :

- Designer will specify how processing will be perform in code design step.
- Code is a group of character or digit ~~at~~ that identifies & describe any item.

eg - PINCODE NO.

- The purpose of code is to make the task is easy for identification & retrieval of informations of item

## → Principle of Code Design :

1. Uniqueness.
2. Compactness.
3. Uniformity.
4. Expansibility.
5. Simplicity.
6. Versatility.
7. Clarification.
8. Stability.
9. Meaningfulness.

$$u^2 s^2 v^4 c^2 EM$$

### 1.) Uniqueness :

- The code for any particular item should be



unique.

- eg. University exam seatno should be unique for each student.

## 2) Compactness :

- The length of code should be minimum as possible
- eg. M & F can be used for Male & Female.

## 3) Uniformity :

- Uniform sign & Format is highly desirable in mechanized data processing system to avoid inconsistency and confusion in result.

## 4) Expansibility :

- The code structure should allow growth.
- Enough time should be provided in construction itself for future expansion.

## 5) Simplicity :

- The code should be simple to use and easy to understand by each user with minimum experience.



### 6) Versatility:

- It should be easy to modify to reflect necessary changes in condition, characteristic & relationship of encoded entities.

### 7) Classification:

- So, the user sorted output data in pre determine format is valuable.

### 8.) Stability:

- Code should not be updated or modify frequently.
- Modification in code are costly, Claricle task ~~degraded~~ degrade the system & also affect user efficiency

### 9.) Meaningfulness:

- Code should be meaningful so that it reflect characteristics of encoded entities.

# → Types of code design or Classification of Code design

## Types of code design

Significant  
code

Logical  
code

COLLATING  
code

No Significant  
code

check  
digit  
code

Matrix  
code

Sequential  
code

Random  
code

Alphabetical  
code

HIERARCHICAL  
code

CHRONOLOGICAL  
code

CLASSIFI  
CATION  
code

Mnemonic  
code

Acronym  
code

Decimal  
code

Faceted  
code

### 1.) Significant code:

- Digit or letter is identifiable characteristic of item.



- It is used in Inventory System.

- eg. bulb manufacturing Co. uses ~~for~~ electronic bulb for Inventory purpose, following coding may be used,

(A) Bulb can be classified as automobile, domestic or Clinical.

- They can be used code as A, D & C respectively.

(B.) Colour can be given for bulb as follow.

1 → Green

2 → Red

3 → Yellow

4 → White

5 → Milky

~~6 → Colourless~~

(C) 3 digit code can be given to different type of bulb like,

5W	→	005
10W	→	010
500W	→	500

- Red bulb of 10W for domestic purpose is represented by,

D 2 0 1 0  
↓  
Domestic  
Red

10W.



## 2) logical code :

- Individual values are define or desired in conjunction with consistant. well define procedure or algorithms.
- There are 2 type of logical code -
  - i) check digit code
  - ii) Matrix code

### i) check digit code :

- It is used ~~in~~ to detect transposition or transcription errors.
- eg. 586 is entered as 568 or 589

### ii) Matrix Code :

- matrix code is based on x,y coordinate locations.
- It is useful in coding relationship between 2 entities.
- eg.

70      30      90  
valsad    Narsari    surat    vadodra.

To from	1	2	3	4
1	0	90	120	190
2	90	0	30	100
3	120	30	0	70
4	190	100	70	0

1 → vadodra

2 → surat

3 → Narsari

4 → valsad



- value of
- (2,4) ~~code~~ is 100, indicate distance of swat to valsad is 100km.

### 3.) Collating Code :

- Collating code structure is design so that when sorted by code no, the items represented by code are predetermine sequence.

- There are 4 types of Collating Code as follow :

- i) Alphabetical code
- ii) Hierarchical code
- iii) Chronological code
- iv) Classification code

#### i) Alphabetical code :

- For effectiveness, alphabetical code required placement of all item in alphabetical sequence.
- eg. Student name are stored according to 1<sup>st</sup> name & then middle name & then lastname.

#### ii) Hierarchical code :

- It provide top down interpretation for item.
- Every item is factored into groups, sub groups etc.
- eg. Sales person can be grouped into region wise  
(North, South, West, East)



and then group wise (01-12) and then sales person no (00, 01, 02 ..., 99) so that sales person code is represented by 50147

### iii) chronological code

- It is assign in the order of event. So that each code has higher value then last code assign
- eg. preparing birth registrations according to DOB  
Starting with earliest born
- There are 2 methods to doing abriviation
  - 1) **Mnemonic** code
  - 2) **Acronym** code.
- Mnemonic code help user to convey meanings quickly.
- eg. BCA  $\rightarrow$  Bachelor of Computer Application.  
MCA  $\rightarrow$  Master of Computer Application.
- Acronymic code is particula type of mnemonic representation construction ~~de several~~ of 1<sup>st</sup> letter or several letter of word.
- eg. FORTRAN - FORMula TRANslator.  
COBOL - Common Business Oriented Language.



#### iv) Classification codes

- It place separate entity such as events, people, objects into different groups called classes.
- There are of 2 types:
  - i) Decimal code
  - ii) **Faceted** code.  
Facited
- Decimal code is use in library for uniquely identifying book.
  - Science  $\rightarrow 01$
  - Commerece  $\rightarrow 02$
  - Arts  $\rightarrow 03$
  - Comp. Science  $\rightarrow 01.01$
  - Zoology Sci  $\rightarrow 01.02$
  - Spw Engineering  $\rightarrow 01.01.01$
  - RDBMS  $\rightarrow 01.01.02$
- **Faceted** code represent different side. [characteristic] of decoded item.
- Each characteristic represent many ~~characteristic~~ as require
- eg. **Footwear** manufacture co. assign code for product with the help of different side of **Footwear**.



Type	Gender	Size	Material
1) Sandle (SAN)	M /	12	Lether (LEH)
2) shoes (SHO)	P		Rubber - (RUB)
3) Chappal (CHA)			plastic (PLA)

SANPOTLEH

represented Sandle, Female, 07 size with lether material.

#### 4) Non Significant Code:

- no information by itself.

- eg. **Range of no.** may be allocated to customer a/c no.

- There are of 2 type

- i) sequential code
- ii) random code.

i) Sequential code is either no. or letter assign in series. They tell order in which event has occurred.

eg. Numbering of checkbook is done sequentially.

ii) Random code is thrown from no. list which is not detectable in order of sequence. They are generated through the computer program. or it can be available in statistical table.



eg. The item following the item with code no 300 may be given any no. selected from provided list.

- Random code is used for security purpose.